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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,566	02/10/2004	Kazuhiko Takemura	FJ-2003-053-US	8502

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MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER	
HERNANDEZ, NELSON D	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/774,566	TAKEMURA ET AL.	
	Examiner	Art Unit	
	Nelson D. Hernández	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) *13-21,23-25,27,29,30,32,34 and 35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,22,26,28,31 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Election/Restrictions

2. Applicant's election without traverse of claims 1-12, 22, 26, 28, 31 and 33 (Group 1) in the reply filed on April 30, 2008 is acknowledged.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 31 and 33 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 31, **claim 31** recites "An image processing program that causes a computer to implement:" A program as claimed is not tangible embodied on the computer since it does not establish a connection between the recording medium and said computer. Since a computer program is merely a set of instructions capable of being executed by a computer or another device, the program logic itself is not a process; therefore the invention as claimed is non-statutory. Is the claim meant to recite "A recording medium having stored therein

a computer program that when executed by a computer would implement:"?

5. **Regarding claim 33**, **claim 33** recites "An image processing program that causes a computer to implement:" A program as claimed is not tangible embodied on the computer since it does not establish a connection between the recording medium and said computer. Since a computer program is merely a set of instructions capable of being executed by a computer or another device, the program logic itself is not a process; therefore the invention as claimed is non-statutory. Is the claim meant to recite "A recording medium having stored therein a computer program that when executed by a computer would implement:"?

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 2 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebihara, JP 2002-218326 A in view of Sakurai, JP 6-153089 A.

Regarding claim 1, Ebihara discloses an image processing apparatus (Fig. 1) comprising: an image pickup device (Fig. 1: 101) for capturing a first image with a short time exposure and a second image at a long time exposure; an information storage (Fig. 1: 109) which stores first image information and the

second image information (Short and Long exposures); a selection device (Fig. 1: 108) for selecting whether or not said second image information is to be stored; and a storage control device (CPU 112 as shown in fig. 1) that controls storing of said first image information and said second image information according to selection performed with said selection device (Machine English Translation, page 7, ¶ 0038-0040; page 8, ¶ 0045-0049; page 9, ¶ 0050-0057; page 10, ¶ 0059-0061; page 11, ¶ 0063).

The image processing apparatus in Ebihara is different from the claimed invention in that Ebihara does not explicitly disclose that said image pickup device has a structure in which a large number of primary photosensitive pixels having a narrower dynamic range and higher sensitivity and a large number of secondary photosensitive pixels having a wider dynamic range and lower sensitivity are arranged in a given arrangement and image signals can be obtained from said primary photosensitive pixels and said secondary photosensitive pixels at one exposure so that said first image information is obtained from said primary photosensitive pixels and said second image information obtained from said secondary photosensitive pixels.

However, Sakurai discloses an image processing apparatus for obtaining a wide dynamic range, comprising a solid-state image pickup device (See fig. 1), which has a structure in which a large number of primary photosensitive pixels having a narrower dynamic range and higher sensitivity (Fig. 1: 2) and a large number of secondary photosensitive pixels (Fig. 1: 1) having a wider dynamic range and lower sensitivity are arranged in a given arrangement and image

signals can be obtained from said primary photosensitive pixels and said secondary photosensitive pixels at one exposure (Machine English Translation, Page 3, ¶ 0007-0010; page 4, ¶ 0012-0016; page 5, ¶ 0022).

Therefore, taking the combined teaching of Ebihara in view of Sakurai as a whole, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to apply the concept of having an image sensor having a plurality of pixels having a particular sensitivity and a plurality of pixels having a higher sensitivity to capture two images with different sensitivities at the same time to produce an image with extended dynamic range from the two images as taught in Sakurai to modify the teaching of Ebihara to have the image pickup device with a structure in which a large number of primary photosensitive pixels having a narrower dynamic range and higher sensitivity and a large number of secondary photosensitive pixels having a wider dynamic range and lower sensitivity are arranged in a given arrangement and image signals can be obtained from said primary photosensitive pixels and said secondary photosensitive pixels at one exposure. The motivation to do so would have been to allow the image pickup device to capture the images having different sensitivities simultaneously thus shortening the time required to capture image data, helping to capture animated image data as suggested by Sakurai (Machine English Translation, page 3, ¶ 0009).

Regarding claim 2, the combined teaching of Ebihara in view of Sakurai as discussed and analyzed in claim 1 further teaches that said first image information and said second image information are stored as two separate files

associated with each other (See Ebihara, Machine English Translation, page 11, ¶0063).

Regarding claim 26, claim 26 is a method claim of the apparatus in claim 1. Limitations have been discussed and analyzed in claim 1.

8. Claims 3-11 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebihara, JP 2002-218326 A in view of Sakurai, JP 6-153089 A and further in view of Takahashi et al., US Patent 5,929,908.

Regarding claim 3, the combined teaching of Ebihara in view of Sakurai fails to teach that said second image information is stored as difference data between said first image information and said second image information in a file separate from a file storing said first image information.

However, Takahashi et al. discloses a camera (Fig. 10), comprising an image sensor (Fig. 10: 104) that capture a first image at a first time exposure and a second image at a second time exposure to obtain image information from said images and generate an image with higher dynamic range based on said image information (Col. 11, line 49 – col. 13, line 67). Takahashi et al. further discloses generating difference data between the two images to be used as reference data (Col. 12, line 43 – col. 13, line 5-67), and further teaches compressing the first image and storing the reference data with the compressed image in memory (Col. 12, line 43 – col. 13, line 5-67).

Therefore, taking the combined teaching of Ebihara in view of Sakurai and further in view of Takahashi et al. as a whole, it would have been obvious to one

of an ordinary skill in the art at the time the invention was made to use the concept of storing image information of a first image with image information representing a difference between the first image and a second image to a memory device to modify the teaching of Ebihara and Sakurai to have said second image information stored as difference data between said first image information and said second image information in a file separate from a file storing said first image information. The motivation to do so would have been to reduce the amount of data to be stored as necessary data for dynamic range expansion processing as suggested by Takahashi et al. (Col. 13, lines 54-67).

Regarding claim 4, limitations have been discussed and analyzed in claim 3.

Regarding claim 5, the combined teaching of Ebihara in view of Sakurai and further in view of Takahashi et al. as discussed and analyzed in claim 3 further teaches that said second image information is compressed by compression technology different from compression technology used for said first image information and stored (In the Takahashi et al. reference, it is taught that the first image information (which represent the first image) is compressed and stored in memory while the second image information (which represent the difference between the two images) is stored in memory with no compression; col. 13, line 5-67. This teaches that the second image information is compressed by compression technology different from compression technology used for said first image information and stored). Grounds for rejecting claim 3 apply here.

Regarding claim 6, limitations have been discussed and analyzed in claim 3.

Regarding claim 7, limitations have been discussed and analyzed in claim 3.

Regarding claim 8, the combined teaching of Ebihara in view of Sakurai and further in view of Takahashi et al. as discussed and analyzed in claim 3 further teaches a D range information storage for storing dynamic range information for said second image information with at least one of said first image information and said second image information (Takahashi et al. discloses storing D range information on the memory 111 (i.e. difference data between the two images, information on exposure conditions (iris, and shutter sped)); col. 13, lines 5-67). Grounds for rejecting claim 3 apply here.

Regarding claim 9, limitations have been discussed and analyzed in claim 8.

Regarding claim 10, limitations have been discussed and analyzed in claim 8.

Regarding claim 11, limitations have been discussed and analyzed in claim 8.

Regarding claim 31, claim 31 requires a program for performing the functions and method of claims 1 and 26. The combined teaching of Ebihara in view of Sakurai and further in view of Takahashi et al. as discussed and analyzed in claim 3 further discloses the programs as claimed in claim 31 (Takahashi et al.

discloses the method and apparatus can be applied to a computer program; col. 15, lines 41-46). Grounds for rejecting claim 1 and 26 also apply here.

9. Claims 12/1 and 12/2, 22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebihara, JP 2002-218326 A in view of Sakurai, JP 6-153089 A and further in view of Wexter et al., US 2002/0097409 A1.

Regarding claims 12/1 and 12/2, although the combined teaching of Ebihara in view of Sakurai teaches a D range setting operation device for specifying a dynamic range for said second image information (Ebihara, Machine English Translation, page 7, ¶ 0038-0040; page 8, ¶ 0045-0049; page 9, ¶ 0050-0057; page 10, ¶ 0059-0061; page 11, ¶ 0063), the combined teaching of Ebihara in view of Sakurai fails to teach and a D range changeable control device for changing a reproduction gamut for said second image information according to setting specified with said D range setting operation device.

However, Wexter et al. discloses a method for reproducing image data wherein the reproduction gamut of the image is changed by adjusting the luminance dynamic range of the image so that the color values can be fitted in a limited color gamut of an output medium (See fig. 2; page 3, ¶ 0031-0032 and ¶ 0034-0036; page 4, ¶ 0038-0039).

Therefore, taking the combined teaching of Ebihara in view of Sakurai and further in view of Wexter et al. as a whole, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to apply the concept of changing the reproduction gamut of the image by adjusting the

luminance dynamic range of the image as taught in Wexter et al. to modify the teaching in Ebihara and Sakurai to have a D range changeable control device for changing a reproduction gamut for said second image information according to setting specified with said D range setting operation device. The motivation to do so would have been to extended color gamut information associated with an original extended color gamut image can be retained on a hard-copy output print having a limited color gamut and to obtain the benefits associated with the original extended color gamut image source without requiring that it be archived separately as suggested by Wexter et al. (Page 2, ¶ 0016-0022).

Regarding claim 22, Ebihara discloses an image processing apparatus (Fig. 1) comprising: an image pickup device (Fig. 1: 101) which or capturing a first image with a short time exposure and a second image at a long time exposure; an information storage (Fig. 1: 109) which stores first image information and the second image information (Short and Long exposures); a storage control device (CPU 112 as shown in fig. 1) which controls storing of said first image information and the second image information (Short and Long exposures) and a D range setting operation device for specifying a dynamic range for said second image information (Machine English Translation, page 7, ¶ 0038-0040; page 8, ¶ 0045-0049; page 9, ¶ 0050-0057; page 10, ¶ 0059-0061; page 11, ¶ 0063);

The image processing apparatus in Ebihara is different from the claimed invention in that Ebihara does not explicitly disclose that said image pickup device has a structure in which a large number of primary photosensitive pixels

having a narrower dynamic range and higher sensitivity and a large number of secondary photosensitive pixels having a wider dynamic range and lower sensitivity are arranged in a given arrangement and image signals can be obtained from said primary photosensitive pixels and said secondary photosensitive pixels at one exposure so that said first image information is obtained from said primary photosensitive pixels and said second image information obtained from said secondary photosensitive pixels; and a D range changeable control device which changes a reproduction luminance gamut for said second image information according to a setting specified with said D range setting operation device.

However, Sakurai discloses an image processing apparatus for obtaining a wide dynamic range, comprising a solid-state image pickup device (See fig. 1), which has a structure in which a large number of primary photosensitive pixels having a narrower dynamic range and higher sensitivity (Fig. 1: 2) and a large number of secondary photosensitive pixels (Fig. 1: 1) having a wider dynamic range and lower sensitivity are arranged in a given arrangement and image signals can be obtained from said primary photosensitive pixels and said secondary photosensitive pixels at one exposure (Machine English Translation, Page 3, ¶ 0007-0010; page 4, ¶ 0012-0016; page 5, ¶ 0022).

Therefore, taking the combined teaching of Ebihara in view of Sakurai as a whole, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to apply the concept of having an image sensor having a plurality of pixels having a particular sensitivity and a plurality of pixels

having a higher sensitivity to capture two images with different sensitivities at the same time to produce an image with extended dynamic range from the two images as taught in Sakurai to modify the teaching of Ebihara to have the image pickup device with a structure in which a large number of primary photosensitive pixels having a narrower dynamic range and higher sensitivity and a large number of secondary photosensitive pixels having a wider dynamic range and lower sensitivity are arranged in a given arrangement and image signals can be obtained from said primary photosensitive pixels and said secondary photosensitive pixels at one exposure. The motivation to do so would have been to allow the image pickup device to capture the images having different sensitivities simultaneously thus shortening the time required to capture image data, helping to capture animated image data as suggested by Sakurai (Machine English Translation, page 3, ¶ 0009).

The combined teaching of Ebihara in view of Sakurai fails to teach and a D range changeable control device for changing a reproduction gamut for said second image information according to setting specified with said D range setting operation device.

However, Wexter et al. discloses a method for reproducing image data wherein the reproduction gamut of the image is changed by adjusting the luminance dynamic range of the image so that the color values can be fitted in a limited color gamut of an output medium (See fig. 2; page 3, ¶ 0031-0032 and ¶ 0034-0036; page 4, ¶ 0038-0039).

Therefore, taking the combined teaching of Ebihara in view of Sakurai and further in view of Wexter et al. as a whole, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to apply the concept of changing the reproduction gamut of the image by adjusting the luminance dynamic range of the image as taught in Wexter et al. to modify the teaching in Ebihara and Sakurai to have a D range changeable control device for changing a reproduction gamut for said second image information according to setting specified with said D range setting operation device. The motivation to do so would have been to extended color gamut information associated with an original extended color gamut image can be retained on a hard-copy output print having a limited color gamut and to obtain the benefits associated with the original extended color gamut image source without requiring that it be archived separately as suggested by Wexter et al. (Page 2, ¶ 0016-0022).

Regarding claim 28, claim 28 is a method claim of the apparatus in claim 22. Limitations have been discussed and analyzed in claim 22.

10. Claims 12/3, 12/4, 12/5, 12/6, 12/7, 12/8, 12/9, 12/10, 12/11 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebihara, JP 2002-218326 A and Sakurai, JP 6-153089 A in view of Takahashi et al., US Patent 5,929,908and further in view of Wexter et al., US 2002/0097409 A1.

Regarding claims 12/3, 12/4, 12/5, 12/6, 12/7, 12/8, 12/9, 12/10 and 12/11, although the combined teaching of Ebihara in view of Sakurai and further in view of Takahashi et al. teaches a D range setting operation device for

specifying a dynamic range for said second image information (Ebihara, Machine English Translation, page 7, ¶ 0038-0040; page 8, ¶ 0045-0049; page 9, ¶ 0050-0057; page 10, ¶ 0059-0061; page 11, ¶ 0063), the combined teaching of Ebihara in view of Sakurai fails to teach and a D range changeable control device for changing a reproduction gamut for said second image information according to setting specified with said D range setting operation device.

However, Wexter et al. discloses a method for reproducing image data wherein the reproduction gamut of the image is changed by adjusting the luminance dynamic range of the image so that the color values can be fitted in a limited color gamut of an output medium (See fig. 2; page 3, ¶ 0031-0032 and ¶ 0034-0036; page 4, ¶ 0038-0039).

Therefore, taking the combined teaching of Ebihara and Sakurai in view of Takahashi et al. and further in view of Wexter et al. as a whole, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to apply the concept of changing the reproduction gamut of the image by adjusting the luminance dynamic range of the image as taught in Wexter et al. to modify the teaching in Ebihara, Sakurai and in view of Takahashi et al. to have a D range changeable control device for changing a reproduction gamut for said second image information according to setting specified with said D range setting operation device. The motivation to do so would have been to extended color gamut information associated with an original extended color gamut image can be retained on a hard-copy output print having a limited color gamut and to obtain the benefits associated with the original extended color gamut image

source without requiring that it be archived separately as suggested by Wexter et al. (Page 2, ¶ 0016-0022).

Regarding claim 33, claim 33 requires a program for performing the functions and method of claims 22 and 28. The combined teaching of Ebihara and Sakurai in view of Takahashi et al. and further in view of Wexter et al. as discussed and analyzed in claim 3 further discloses the programs as claimed in claim 31 (Takahashi et al. discloses the method and apparatus can be applied to a computer program; col. 15, lines 41-46). Grounds for rejecting claim 22 and 28 also apply here.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernández whose telephone number is (571)272-7311. The examiner can normally be reached on 9:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernández
Examiner
Art Unit 2622

NDHH
July 17, 2008

/Lin Ye/
Supervisory Patent Examiner, Art Unit 2622